



Charlotte Mason's House of Education,
Scale How, Ambleside, UK, 2009

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OUR WORK.

House of Education.—The students in residence go out as probationers for some part of the long summer vacation. Applications for them should be made as early as possible.

Parents' Review School.—The examination has been most satisfactory, some excellent work has been done in all the classes. The favourite subjects—Bible History, Greek, Roman and English History, Natural History, Geography and Composition—were on the whole thoroughly well done. Spelling and Writing want much more care in many cases. Very little at a time, and that well and accurately done, will soon improve the spelling of ordinary children. The arithmetic needs more care and good practice in elementary rules. The French and German is good, but less was sent in for examination than usual. Brushwork.—Some excellent drawings were sent in by many of the children. Some of the girls in class III. did beautiful copies from Nature, of fruit and flowers. We are very sorry there has been so much delay, but owing to illness it has been unavoidable. Will those who have not sent stamps for the return of their papers, and who wish to have them, kindly do so?

House of Education Natural History Club.—Notes by M. L. Hodgson. The insects belonging to the *Hymenoptera* include those possessed of a high order of intelligence. Bees, wasps, ants, Ichneumon flies, saw-flies, gall-flies, and their allies.

The *Hymenoptera* are mandipulate insects, with mouths formed for biting and suction. Their most striking characteristics are the four membranous wings, and the small size of the prothorax. The majority of the females possess stings, which are useful for many purposes, and all undergo the successive changes of egg, larva, pupa and perfect insect.

The tribe *Aculeata*.—Generally social insects, consisting of males, females and neuters. Ovipositor (egg-placer), modified into a sting. Larvæ, footless grubs.

To this tribe belong the numerous species of honey-bees, also our social wild bees, the humble or bumble bee. The yellow-tailed humble bee (*Bombus terrestris*) is very common, it is a black insect with a yellow extremity to its abdomen. It is very fond of making its nest in a deserted mouse-hole; by so doing it is saved all the labour of excavating a hollow to contain the nest.

Another very common bee is *Bombus lucorum*, an insect with a white tail. Both these bees form underground colonies. The moss humble bee (*Bombus muscorum*), makes its nest in mossy banks or walls. The female hibernates, and may be seen early in the Spring, hunting about the banks in order to find a suitable spot for a nest. Having found one, she proceeds to form a dome of moss or other vegetable matter, and then lines the interior with wax, so as to render it water-tight, the oval cells are formed of a brown coarse wax, into each of which she places a ball of pollen and honey as food for the young. When full-grown the larvæ spin silken cocoons, from which emerge nothing but worker-bees, and thus the nest is provided with the attendants necessary for the rapidly increasing colony.

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The stone humble bee (*Bombus lapidarius*) prefers to build its nest under stones, as its name implies. It is an insect with an orange-red tail, and is, of all the bees mentioned, of the greatest importance. It does inestimable service in fertilizing the common red clover. Where other bees are obliged to bite a hole in the base of the flower tube, this bee, by reason of its long proboscis, is able to procure the honey from the flower without injuring it in doing so, and thus the plant is able to obtain the pollen for its proper fertilization. Efforts have been made to introduce this and other bees into New Zealand, where the clover produces splendid crops from English seed, but fails to produce seed for itself, as there are no native insects which can in any way assist in the carrying of pollen from one flower to another. Among our solitary bees we have many, which in the beautiful nests they make and the care they take in providing for their young, will well repay our most careful study and observation. The leaf-cutter bee leaves its mark on many of our rose leaves and poppies, from which it bites out small circular pieces; it forms its nest underground, and lines it most beautifully with the pieces cut from the leaves of plants. The bottom of the cell is filled with food and the egg placed in it. One of the many parasites which make use of the bees takes advantage of this habit, and as soon as the egg is placed in the food stuff and the bee departed for a further supply of food or covering, places its egg in the cell, and as soon as the grub is hatched it eats the bee's egg and thrives on the food. Another bee, the Hoop shaver, is described by Gilbert White, and its curious habit of shaving off the hairy covering of the campion to form its nest, did not escape his observant eyes, as it forms an item in his Nature Note Book.

There are many other bees which you may be able to hunt out for yourselves, as well as the rest of the insects in this order, which I can only mention this evening, though I hope to say a little about them at some future date.

It may be as well that I should say a few words about stings. There is a popular theory that humble bees have no stings, but this is a mistake for the females all possess stings, though some are more ready to use them than others. If you examine a bee's sting you will see a hollow dart with a pair of barbed lancets lying side by side in a narrow groove. On each side and close to the dart there are a pair of hairy feelers, which serve the purpose of guiding the dart to a suitable point of attack. A delicate tube conducts the poison from the poison bag into the wound which is first pierced by the dart and then deepened by the lancets, these are acted upon by beautifully contrived levers. The whole apparatus is drawn up between the terminal plates of the abdomen when not in use. All the bees mentioned may easily be seen and watched, if you only look. A dry sunny bank or a patch of sandy soil will likely afford you a good point of vantage, and I shall be glad to hear of any facts you are able to tell me about the bees you see in this district.

We have received a list of forty-three flowers found by Miss S. Smyth, during February '94, in a Swiss village.